Center for Operational Oceanographic Products and Services
Information Systems Division

Year 2000 Compliancy

Non - Critical System Test Plans: Personal Computers and Network Services

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Silver Spring, Maryland
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noaa **National Oceanic And Atmospheric Administration**

U.S. DEPARTMENT OF COMMERCE
National Ocean Service
Center for Operational Oceanographic Products and Services

1.1 Personal Computers and Network Services

Summary:

- Windows NT 4.0 is run on all operational CO-OPS personal computing workstations. Windows NT installations were compliant when Service Pack 4 was installed February 1999.

- Hardware, BIOS and peripherals associated with the personal computing workstations are all compliant. See attached CO-OPS PC Matrix and Vendor Compliancy Documentation.

1.1.1 Software and Firmware Compliancy

1.1.1.1 Commercial Off the Shelf (COTS) Application Software

See “Year 2000 Compliancy Critical System Test Plans: NWLON Data Processing and Analysis” for a list of COTS client software installed on CO-OPS personal computers and an assessment of their compliancy.

1.1.1.2 Operating Systems and BIOS

- Windows NT 4.0 is run on all operational CO-OPS personal computing workstations. Windows NT installations were compliant when Service Pack 4 was installed February 1999.

- CO-OPS operate personal computer workstations with BIOS manufactured by (1) Phoenix ; (2) American Megatrends International and (3) Award Modular. All installed BIOS on all CO-OPS personal computer workstations used in operations, are compliant. See attached PC matrix.

1.1.1.3 In-House Written Software

There is no operational software running on any personal workstation within CO-OPS. PCs are used in PORTS (see Year 2000 Compliancy Critical System Test Plans: PORTS™) and when generating Tide and Current Predictions (see Year 2000 Compliancy Critical System Test Plans: Tide and Current predictions).

1.1.2 Hardware Compliancy

1.1.2.1 CPU

All personal computers used in operations are manufactured by either Gateway (G6200), Micron (Millennia Pro, P-100) or Dell (Precision XPS). All operational personal computers are Pentiums with processors at least 200 MHz. All of these hardware systems and their Intel processors have been deemed compliant by the manufacturers. See attached PC

matrix.

1.1.2.2 Peripherals

All operational printers are either Hewlett Packard (HPLJ5/SI, HPLJIII/SI, HPLJ6L, HPLJ4L, HPJL3, HPLJ5P), Epson (FX 870, Epson (FX-850), QMS 9QMS2425, QMS Magic Color, QMS Magic Color 2CX, QMS 1725), or Kodak (Kodak XLS, Kodak Color Ease PS). All of these products are compliant. See attached PC matrix.

- **Testing References/Guidelines**

  1. Email from remote and local CO-OPS offices (Appendix I).

  2. http://www.rdc.noaa.gov/~irm/y2kindex.htm ("Test Your PC for Year 2000")

  3. Mueller, Karl "Microsoft Windows NT 4.0 and Year 2000 A Guide to Compliance" 4pp. 1998) Appendix II

All personal computers and network servers were tested using the National Software testing Laboratory's (NSTL) YMark2000 program (see "Representative Results) as well as the Y2K check program that is associated with the NT Service Pack 4. See Appendix I.

C Representative Test Results

These Terms and Conditions must accompany any distribution of the Software, shall not be deleted or modified in any way, and shall be interpreted, construed and enforced in accordance with the laws of the State of New York.

Do you accept the terms of this agreement? Yes

In order to guarantee accuracy, please be sure to execute this test after a clean boot to DOS!

Current Date & Time: February 22, 1999 13:01:53

Testing for Motorola MC146818 compatibility:

- MC146818 compatible hardware clock.

Testing for progression to Year 2000:

January 01, 2000 00:00:01
- Progression to Year 2000 occurs

Testing 21st century leap years:

- **21st century leap year test passes**

Summary: (0)

- **This system correctly supports the Year 2000.**

YMark2000, version 99.01.01
NSTL, a division of CMP Media, Inc., offers this Year 2000 compliance test program free of charge and royalties per license agreement.

The purpose of this test is to determine if an "industry standard" or "compatible" PC supports the Year 2000.

Questions, comments or requests for additional testing should be directed to:
internet - Year2000@nstl.com

A:\>

APPENDIX I

From: Geoffrey French <geoff.french@noaa.gov>
To: tom@ceob-g30.nos.noaa.gov <tom@ceob-g30.nos.noaa.gov>
Subject: Y2K
Date: Saturday, February 06, 1999 12:43 PM

All three NT servers have been updated to NT Service Pack 4 for Y2K compliance.

Geoffrey French
National Ocean Service
geoff.french@noaa.gov

From: Larry M. Neeson <neeson@fob.noaa.gov>
To: 'Tom Bethem' <tom@ceob-g30.nos.noaa.gov>
Cc: 'Michael C. O'Hargan' <ohargan@fob.noaa.gov>; 'Mike Evans' <Mike@ceob-g30.nos.noaa.gov>
Subject: NT Y2K
Date: Tuesday, January 19, 1999 11:07 AM

Tom,

Dave Widden has made the NT Y2K patches.
Service Pack 4, IE4.1, DAO patch on the Network Servers and desk tops as required.

Larry

From: Mike O'Hargan <ohargan@fob.noaa.gov>
To: tom@ceob-g30.nos.noaa.gov <tom@ceob-g30.nos.noaa.gov>
Subject: Y2K compliance on NT 4.0 Servers/Workstations at PRO
Date: Tuesday, January 12, 1999 4:54 PM

Here is the FOB, Seattle upgrade as requested. Mike

>X-Sender: rmeyer@161.55.90.210
>Date: Tue, 12 Jan 1999 08:36:59 -0800
>To: ohargan@fob.noaa.gov
>From: Rolin Meyer <rmeyer@pactide.noaa.gov>
>Subject: Y2K compliance on NT 4.0 Servers/Workstations at PRO
>Cc: Mickey Moss <mmoss@pactide.noaa.gov>
>
>Hi Mike,
>
>**As of 01/12/99, all machines running Windows NT 4.0 at FOB-PRO have had all >current Y2K compliance updates applied. Machines affected are:**
>
>Pro-nts1 Primary NT server

>Pro-nts2 Backup NT server
>rmeyerofNT Workstation - R.Meyer
>nb-rmeyerNT Workstation laptop - R.Meyer
>
>Pertinent applied updates included:
>
>**Windows NT 4.0 Service Pack 4**
>Microsoft Internet Explorer 4.01 Service Pack 1 (from 4.0)
>Microsoft Site Server Express 3.0 (from 2.0)
>Microsoft Data Access Components 2.0 Service Pack 1
>
>
>
>
>Rolin
>
>----------
>| Rolin S. Meyer | |
>| NOAA/NOS/OPSD/FOB/Pacific Regional Office | Ph:(206)526-6360 |
>| 7600 Sand Point Way NE, Bldg 8 | Fx:(206)526-6365 |
>| Seattle, WA 98115 USA | rmeyer@pactide.noaa.gov |
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APPENDIX II

Microsoft Windows NT 4.0 and Year 2000 (y2k)

A Guide to Compliance

Karl A. Mueller
11/25/1998

Introduction:

The purpose of this document is to explain the process required to make an Intel based computer (with Windows NT 4.0 as its operating system) Year-2000 (y2k) compliant. To be assured compliance, all components of the computer must be examined and tested for y2k difficulties. These components can be divided into three groups: Hardware, Software Applications, and Operating System.

Hardware:

For a computer's hardware to be y2k compliant, all hardware must transition to the year 2000 without difficulties. Furthermore, after the year 2000 is reached, the computer clock must report the time and date correctly. There are many hardware sub-systems within the normal Intel based computer. Some of them are the monitor, keyboard, mouse, CD-ROM drive, hard drive, floppy drive, memory, video card, network card, sound card, hard drive interface card, power supply, motherboard, and CPU. The single most important piece of hardware (with respect to y2k compliance) is the motherboard. In fact, I personally have never seen or heard of any hardware sub-system other than the motherboard having y2k issues. The reason for this is that, in general, the other components do not do any date based computations. Of course, it is possible that some unknown video card manufacturer is placing a computer clock on their video cards and perhaps this clock is not y2k compliant. As I have stated before, I have never heard of such a thing. The reason that the motherboard is considered the critical piece of hardware is that the motherboard has integrated into it the computer real time clock (RTC). It is this clock, and the way that the Basic Input-Output System (bios) reads the clock, that determines whether or not the computer's hardware is y2k compliant.

Several real time clock/bios y2k utilities are available that will check your system and report as to its y2k status. It is also possible that the vendor of your computer has done this checking for you, and has published the results on the world wide web. Either way, if your hardware is not y2k compliant, you may have a couple options. The obvious option is to replace the motherboard, or the entire system, with new hardware. If this is the option that you choose, be sure to ask vendors for a y2k compliancy statement before you buy. Alternatively, you can check with the system or motherboard vendor, and see if a bios upgrade is available. This does not necessarily guarantee compliance. As stated before, check with your vendor.

Software Applications:

The software applications that are installed on your computer must also be compliant in order to ensure 100% y2k compliance. Some applications have no date related issues. In other words, the application will work without a problem no matter what the time and date is set to. In fact, the application is totally unaware of the time and date. These applications are y2k compliant by default. On the other hand, applications that do depend on the time and date may have issues that keep them from achieving y2k compliance. The best possible course of action is to contact the manufacturer of each application in use. Most major manufacturers have web sites with y2k information available. When speaking with the manufacturer, some possible questions to ask might be:

?Does <Application X> do any time or date related operations?"

?Which versions of <Application X> are y2k compliant, and which are not?"

?Since <Application X> does do time and date calculations, what does <Application X> query for the time and date? The operating system time? The bios time? The real time clock?

Regarding the question above: Some applications bypass the operating system and directly query the real time clock. If this is the case, be very careful. Most real time clocks only store a two digit year (to which the bios appends the century). Examine carefully the need for such applications, and find substitutes if possible.

Operating System:

The operating system installed on your computer must also be y2k compliant. This document assumes that you have Microsoft Windows NT 4.0 installed. A discussion of other operating systems is beyond the scope of this document. Initially, Windows NT 4.0 was believed to be y2k compliant. Whether this was a rumor, or Microsoft actually published this and then later retracted it, is unknown. Currently, Microsoft has stated that Windows NT 4.0 can be made y2k compliant by installing service pack 4 as well as the y2k fixes. A discussion of this as well as detailed instructions can be found in the section titled Windows NT 4.0 Compliance.

Windows NT 4.0 Compliance:

As stated above, Microsoft CURRENTLY maintains that Windows NT 4.0 is compliant once service pack 4 and the y2k fixes have been installed. What follows is an outline format starting with a computer without an operating system installed, and ending with a y2k compliant version of Windows NT 4.0. (Note: If you already have a computer with Windows NT 4.0 Service Pack 3 and y2k compliant applications installed, you may start at Step 5.)

1. Install NT 4.0 on computer. Delete any existing partitions and create and format new partitions. This will ensure that everything on the computer has been erased.

2. Install Service Pack 3. Many video drivers (as well as others) require at least this service pack to work correctly.

3. Install any drivers necessary for your peripherals that NT did not automatically install. (Video drivers, SCSI drivers, etc)

4. Install all software applications. Make sure the applications themselves are y2k compliant.

5. Install Service Pack 4. At the end of this install, you will be asked whether or not you wish to perform the y2k check. Do so. The y2k check program will then be executed.

6. The y2k check is a very small program. All it does is check for the existence of three pieces of software. These three pieces of software are: Microsoft Internet Explorer 4.0 SP1, Microsoft Data Access Components 2.0 SP1, and Microsoft Site Server Express 3.0. If you do not have any versions of these installed, the y2k check will report your system as compliant. If you have the latest version of these installed, your system will be reported as compliant. If you have older versions of any of these installed, the y2k check will tell you which ones need to be updated.

7. On a typical system, Internet Explorer and the Data Access Components will need to be installed. Download the upgraded components and run the installers. The upgrades can also be found on the Service Pack 4 CD.

8. At this point, your operating system should be y2k compliant.

Conclusion:

The y2k picture is still evolving. In a short number of days, Microsoft could release a new service pack, or new hotfixes, or release a statement something to the effect that **?**Windows NT 4.0 can never be made 100% y2k compliant...If you need y2k compliance, buy NT 5.0.